

Communicable Disease Report

Hawai'i Department of Health
Communicable Disease Division

November/December 2000

Preventing Pneumococcal Disease Among Infants And Young Children

The recommendations of the Advisory Committee on Immunization Practices (ACIP) for preventing pneumococcal disease among infants and young children were published in the MMWR, Recommendations and Reports on October 6, 2000. The following article is a condensed version of the ACIP Recommendations.

Introduction

Streptococcus pneumoniae remains a leading cause of serious illness among young children worldwide and is the most frequent cause of pneumonia, bacteremia, sinusitis, and acute otitis media. In the United States, *S. pneumoniae* causes approximately 17,000 cases/year of invasive disease among children aged <5 years, including 700 cases of meningitis and 200 deaths. Although the previously licensed 23-valent pneumococcal polysaccharide vaccines (PPV23) are effective in preventing invasive pneumococcal disease among older children and adults, these vaccines do not protect children ages <2 years, the age group with the highest rate of disease. In contrast, the new 7-valent pneumococcal conjugate vaccine (PCV7; Prevnar™, licensed in February 2000) prevents

pneumococcal disease among children aged ≥2 years and unlike PPV23, decreases nasopharyngeal carriage, a substantial source of transmission of pneumococci. The conjugate vaccine has other advantages over PPV23, including induction of immune system memory (possibly resulting in longer duration of protection), probable higher efficacy against serotypes causing most invasive disease, and probable effectiveness against noninvasive syndromes (e.g., nonbacteremic pneumonia and acute otitis media).

Incidence of Invasive Disease Among Children

The highest rates of invasive pneumococcal disease occur among young children, especially those aged <2 years. In the U.S., the most common manifestation of invasive pneumococcal disease among young children is bacteremia, without a known site of infection, which accounts for approximately 70% of invasive pneumococcal cases among children <2 years. With the success of conjugate vaccines in preventing invasive *Haemophilus influenzae* type b (Hib) disease, *S. pneumoniae* has become the leading cause of bacterial meningitis in the U.S.

Pneumococcal Serotypes

The capsule of the *S. pneumoniae* bacterium consists of polysaccharides and constitutes a major virulence factor for the bacterium. Antibodies directed against the capsular polysaccharide protect against infection. Currently, 90 serotypes of *S. pneumoniae* have been identified. The majority of serotypes cause serious disease, yet a relatively limited number of serotypes cause the majority of invasive pneumococcal infections. In the United States, the seven most common serotypes isolated from the blood or CSF of children aged <6 years account for 80% of infections and are found in PCV7.

Children at Increased Risk for Pneumococcal Infections

Children who are at increased risk for pneumococcal infections include:

- children with functional or anatomic asplenia;
- children with sickle cell disease or other sickle hemoglobinopathies;
- HIV-infected children;
- children with immunocompromising conditions;
- children with chronic illness (including cardiac and pulmonary disease, CSF leaks, diabetes mellitus);

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The Hawai'i Seropositivity and Medical Management (HSPAMM) Program

Editor's Note: This is the first installment of a two-part article that describes the outcomes of the highly successful HSPAMM program of the STD/AIDS Prevention Branch. Part two will appear in a future edition of the Communicable Disease Report.

Part 1. HISTORY OF THE COHORT

Purpose

The Hawai'i Seropositivity and Medical Management (HSPAMM) program was established by the Department of Health (DOH) in 1989 to encourage persons infected with Human Immunodeficiency Virus (HIV) to seek evaluation and treatment as early as possible to prevent progression of disease. It maintains anonymous demographic, clinical and laboratory data on HIV-infected patients throughout the state. It also facilitates entry into clinical trials conducted in the John A. Burns School of Medicine.

Methods

Primary care physicians and infectious disease specialists who were treating HIV patients in Hawai'i were enlisted to accomplish the above goals. A pretest was conducted over a six month period involving 12 physicians on Kaua'i, Hawai'i, Maui and O'ahu. These physicians enrolled their patients in the program. When it was determined that the

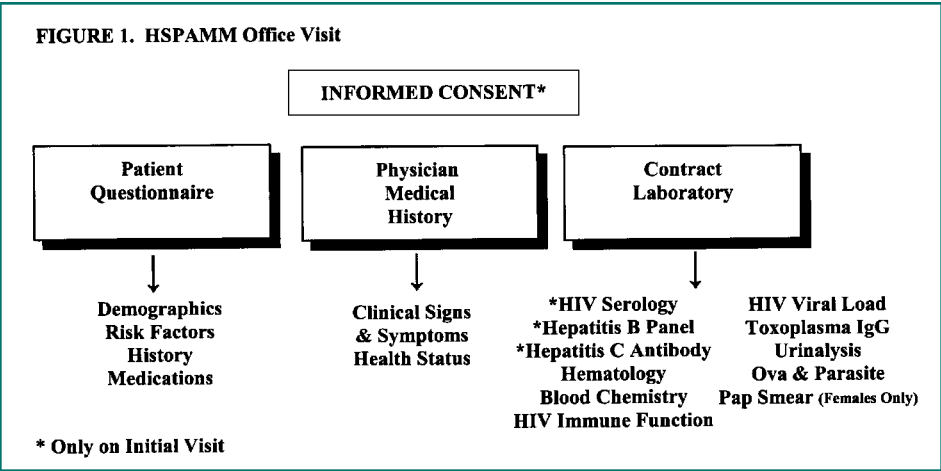
procedures and information flow worked, the program was opened to any physician and HIV-infected person in the state.

Patients are recruited on an on-going basis through their physicians, or are referred to the program by AIDS (Acquired Immunodeficiency Syndrome) Service Organizations (ASO's), social service agencies, or word of mouth. If the patient is in need of a referral to a community physician, it is provided.

Results

Physicians

Over 200 physicians in diverse practice settings and the AIDS Clinical Trials Unit (ACTU) have participated in the program since its inception. With the growing tendency of patients to gravitate towards "AIDS doctors," the number of physicians seeing patients for the program has stabilized at approximately 65. Eighty percent of HSPAMM participants are seen by 20 doctors. Patients seen by



Every six months the patient receives a targeted physical exam using standardized forms, fills out a questionnaire and has blood drawn for a panel of laboratory tests (Figure 1). The physician is reimbursed for the physical. The laboratory panel is done under contract with a commercial laboratory. At six-month intervals the program sends out follow-up packets so the physician's office can notify patients to return the following month. All materials are coded with a unique number and no personal identifiers are available to the program. Data are collected in five major databases, with several smaller databases being used for program management.

providers with substantial HIV experience have demonstrated better health outcomes.¹

Demographic Data

Through September 30, 2000, of 2,361 persons completing initial questionnaires, 2,167 (92%) were men and 188 (8%) were women (Table 1). The mean age was 37.5 years for men and 34.2 years for women, with median ages of 36.4 and 34.2 years for men and women respectively. Forty-five percent of the cohort fell between 30 and 39 years of age.

The majority of men were Caucasian (64%), while the largest ethnic groups among women were Caucasian (43%), followed by Asian/ Pacific Islanders (39%). The proportions of African-Americans and Hispanics in HSPAMM are equal for men and women, but these are higher than in the general population. Approximately 50% of Asian/Pacific Islanders are of Hawaiian/Part Hawaiian

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descent, who represent 10% of the complete cohort and 10% of AIDS cases reported in Hawai'i. The percentage of those identifying themselves as Japanese, Chinese or Filipino in HSPAMM is half that of reported cases of AIDS (approximately 2.5% vs. 5%).²

By socioeconomic status, 61% of men and 78% of women have annual incomes of less than \$20,000 (60% of all women earn less than \$10,000). The completed educational levels of men is also higher: 72% of men report post-secondary education, while only 52% of women report

the same. At entry into the program, 21% of men and 18% of women report no health insurance coverage, and 31% of men and 30% of women report no drug insurance coverage.

Risk Behaviors

The most common risk behaviors by male HSPAMM participants include male to male sex, followed by a history of injection drug use. The predominant risk behaviors for female participants are heterosexual contact and injection drug use. Thirty-nine percent of women reported from two to six risk behaviors.

Laboratory Results

Differences in median CD4+ counts be-

tween men (330) and women (350) are statistically significant at $p=0.015$, but its clinical significance is not understood.³ Also, the implication of lower CD4+ counts on the incidence of opportunistic infections has not been examined.

Of 1,739 individuals tested for *T. gondii* IgG antibodies, 19% of men and 25% of women have been positive.

In 1994, 587 samples randomly selected from 1,129 stored baseline sera collected between October 1989 and November 1993, were tested for antibody to Hepatitis C virus (HCV).⁴ Results were con-

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TABLE 1. Baseline Demographics of Participants in the Hawai'i Seropositivity and Medical Management (HSPAMM) Program: April 1989 - September 2000

Variable	Gender	
	Male (%)	Female (%)
n = 2,361	2,167 (92)	188 (8)
Age (years)		
Median	36.4	34.2
Mean	37.5	34.8
Range	19-71	18-68
Ethnicity		
African-American	90 (4)	8 (4)
American Indian / Alaskan Native	24 (1)	<4 (1)
Asian / Pacific Islander (API)	417 (19)	73 (39)
Caucasian	1,386 (64)	82 (44)
Hispanic	146 (7)	12 (6)
Other	94 (4)	10 (5)
Asian / Pacific Islanders		
Hawaiian / Part Hawaiian	202	36
Filipino	50	9
Japanese	55	9
Chinese	23	5
Mixed or Other API	53	14
Categories of Risk Behaviors Reported		
Male to Male Sex (MSM)	1,686	—
Male to Male Sex +		
Injection Drug Use	202	—
History of Injection Drug Use	321	40
Heterosexual Contact	173	150
Blood Products	49	10
Unknown	30	17

Non-response rate for the above information is two percent or less.

Electronic Health Alert System

A Reminder to Physicians: If you have not done so, please fax back or e-mail your **telephone, fax number and e-mail address*** so that you can be placed on our list for key health alerts.

Currently, the Epidemiology Branch sends important health alerts through the mail. However, with new issues, such as bioterrorism, or other emerging infectious diseases, the Centers for Disease Control and Prevention (CDC) is funding the Department to establish an interactive broadcast fax and e-mail system to send, in a matter of hours, health alerts. Your e-mail addresses will be reserved for emergencies.

This system will also allow practitioners to send electronic messages back in response. Participation in this new alert system is **voluntary**. To be placed on our list for key health alerts, please provide the following information:

NAME: _____

TELEPHONE: _____

FAX NUMBER: _____

*E-MAILADDRESS: _____

* Your *E-mail address* is essential to electronic notification, especially during an emergency, when telephone lines may be "down" or overly busy.

Please return this completed memo via either:

Fax at: **(808) 586-8302**; or

Electronically to: **HYPERLINK**

mailto: **bcpang@mail.health.state.hi.us**

Thank you for your cooperation.

Submitted by Brian Pang, M.P.H., Bioterrorism Response Unit, Epidemiology Branch.

Important Influenza Surveillance Notice

With the delayed availability of influenza vaccines this year, the ability to detect statewide influenza activity becomes essential to preventing excessive morbidity in Hawai'i's residents. Health care providers are asked to help protect our community against influenza this year by active participation in the following influenza surveillance activities.

- Collect throat or nasopharyngeal specimens from patients presenting with influenza-like symptoms, especially in persons who have traveled to a foreign country or the United States mainland within a week prior to the onset of illness. Contact one of the participating

laboratories (Clinical Laboratories of Hawai'i, Diagnostic Laboratory Services, Inc., Kaiser Permanente, or Straub Clinic and Hospital) to submit specimens for rapid testing and viral culture.

- Report outbreaks and any usual or serious cases of influenza-like illness to the Department of Health (DOH), Epidemiology Branch at (808) 586-4586 in Honolulu, (808) 933-0192 on the island of Hawai'i, (808) 984-8213 on Maui and (808) 241-3563 on Kaua'i.

The Epidemiology Branch's Influenza Surveillance Program provides assistance

for communicable disease control in schools, medical and nursing facilities. Visit the DOH's Influenza Surveillance web site at http://www.hawaii.gov/doh/resource/comm_dis/flu/index.htm for the latest information on influenza activity, circulating upper respiratory viruses and pneumonia and influenza mortality data (surveillance data are updated weekly). The site also provides reference statistics from previous years as well as helpful links to vaccine and travel information.

Submitted by Alice Jeong, M.P.H., Epidemiological Specialist, Investigation Section, Epidemiology Branch.

HSPAMM Program

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firmed by the Centers for Disease Control and Prevention. Of those sampled, 16% were positive. The highest rate occurred among those who listed injection drug use as their only risk factor (R.R., 14.4, 95% C.I., 10.1 - 20.7). In the past year the program has tested active participants for antibody to HCV. Results of this survey are pending.

Discussion

Data has been collected from a large, statewide cohort of HIV-infected patients with the assistance of a broad base of community physicians, agencies which provide HIV services; and, most importantly, the participants themselves. Collaboration with the ACTU has resulted in over 90% of those in clinical trials being enrolled in HSPAMM.⁵ Over 11,000 records detail demographic, clinical and laboratory results. Furthermore, the program has a greater enrollment than the total number of clients in all ASO's combined.

There are, however, two major sources of bias which preclude generalization to the HIV-infected population at large. The first is that the cohort is self-selected. Participation is voluntary and there are many potential barriers to patient enrollment: denial, economic and cultural factors, geographic isolation, and some

physicians aversion to paperwork. The second source of bias is that the first HSPAMM participants included only HIV-positive men who had male-to-male sex. In addition, there may be errors due to the anonymous nature of the program and coding, although procedures are in place to control for duplication.

There are also data collection problems, as comparative data from different sources use different parameters in collection, reporting and methodology. Nevertheless, HSPAMM data do not differ dramatically from agencies that collect information on HIV infection.

With time, many HSPAMM patients have moved, been lost to follow-up or are deceased. Over the past several years the program has maintained between 850 and 900 active patients at any given time. As of September 30, 2000, 891 persons are active. Included are HIV-infected persons who have not, as well as those who have been diagnosed with AIDS. With changes in the epidemic, the focus has changed from the historical cohort to those living with HIV, in order to consider present medical needs and those which will arise in the future.

Part 2 of this article will examine issues of access and outcomes in an attempt to answer the question: "Do our programs make a difference to the health and well-being of those served?"

For more information, please call the HSPAMM office in Honolulu at (808) 732-0026.

REFERENCES

- ¹ Kitahata M.M., Koepsell, T.D., Deyo, R.A., Maxwell, C.L., Dodge, W.T., and Wagner, C.L. Physician Experience with the AIDS Syndrome as a Factor in Patient's Survival. *NEJM* 1996; 334(11):701-706.
- ² Hawaii Department of Health, AIDS Surveillance Program. AIDS Surveillance Quarterly Report, September 30, 2000.
- ³ Richmond-Crum S, Eramo D. Women and HIV in Hawai'i: Some Observations from the Hawai'i Seropositivity and Medical Management (HSPAMM) Program (Poster). Hawai'i Medical Library. Honolulu, Hawai'i, September 2000.
- ⁴ Vogt R.L., Richmond-Crum S.M., Diwan A.R. Hepatitis C Virus Infection in a Human Immunodeficiency Virus-Positive Cohort in Hawai'i. *JID*, 1997; 179(2):542.
- ⁵ Shikuma, Cecilia. Personal Communication, 2000.

Submitted by Suzanne Richmond-Crum, Program Director, and Danielle M. Eramo, Patient Services Coordinator, HSPAMM, STD/AIDS Prevention Branch.

Pertussis in Hawai'i: 1990-1999

Introduction

Pertussis, or whooping cough, is a highly contagious bacterial disease of the respiratory tract caused by the bacillus, *Bordetella pertussis*. Pertussis can be a life-threatening illness in infants and in children of preschool age who either have not begun or have not completed an appropriate childhood immunization program that includes pertussis vaccine. Although pertussis predominantly affects children under the age of two years, this disease also affects adults who may serve as an important reservoir for the organism that causes whooping cough.

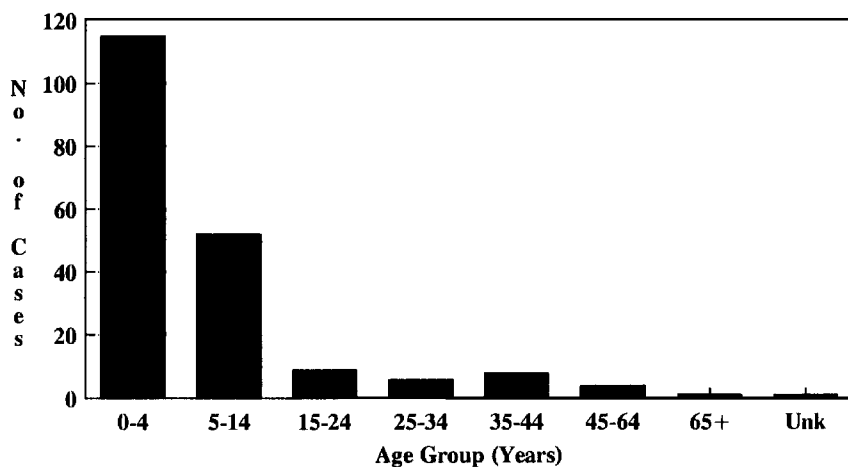
Pertussis Surveillance:

1990-1999. Hawai'i vs. the U.S.

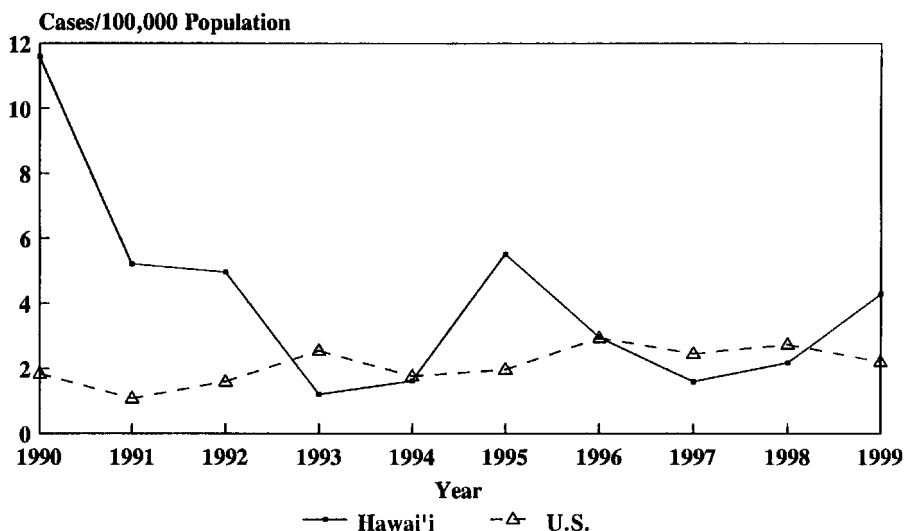
From 1995-1999, 196 cases of pertussis were reported in the State of Hawai'i. Of the cases reported, 115 (59%) were four years of age or younger, and an additional 52 (27%) were from 5-14 years of age, resulting in a total of 86% of cases under the age of 15 years. Those aged 15 years or older constituted only 14% of the reported cases in 1995-1999 (see Figure 1). The 196 Hawai'i cases accounted for a mean annual pertussis incidence of 3.28 cases per 100,000 population reported between 1995-1999, which was 1.3 times

higher than the mean annual incidence of 2.46 cases per 100,000 population reported nationally for the five-year period. The peaks seen in 1995 and 1999 were the result of outbreaks on Maui and the Big Island of Hawai'i, respectively. Yet the overall difference between the Hawai'i rate and the national rate appears to have been decreasing over the past 10 years. In fact, the overall incidence of pertussis in Hawai'i has essentially been the same as or slightly lower than the national rate in five of the past seven years. Hawai'i has exceeded the national pertussis rate (approximately two-fold higher) only twice in the past seven years (Figure 2).

**Fig. 1. Pertussis by Age Group:
Hawai'i – 1995-1999**



**Fig. 2. Pertussis: Incidence by Year
1990-1999: Hawai'i vs. U.S.**



From 1995 to 1999 Maui had the highest mean annual pertussis rate at 10.4/100,000 population. The Big Island of Hawai'i had a rate of 5.07/100,000. Kaua'i had a rate of 4.24/100,000, and O'ahu had a rate of 1.96/100,000. Reasons for the steady decline in the incidence of pertussis in Hawai'i over the past 10 years may at least in part be attributable to the aggressive identification, immunization, and intervention policies in the State of Hawai'i.

Transmission and Clinical Manifestations

Pertussis is primarily transmitted by direct contact with respiratory discharges (i.e., respiratory droplets from a sneeze or cough) from infected persons. It is frequently brought home by a sibling, parent, or relative with the disease who may happen to be contagious and sneezing or coughing, but who may otherwise appear to be well. Because women of childbearing age generally do not have significant levels of protective antibody to pass on to their newborns, most newborns do not receive passive protection against pertussis.¹ The disease is often life-threatening in young infants, particularly those under the age of six months.

Pertussis in Hawai'i

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For susceptible persons, and especially in children, pertussis typically begins with mild common cold-like symptoms that include a runny nose, sneezing, low-grade fever, and a mild cough. Often fever is not present. This is known as the catarrhal stage. The cough gradually worsens over the next two weeks and develops into paroxysms of rapid, prolonged coughs that are followed by a deep inspiration whoop, and post-tussive vomiting. This is known as the paroxysmal stage. The paroxysmal episodes are exhausting and may occur several times per hour during the day and night. The third stage of pertussis is the convalescent phase which is characterized by a gradual resolution of symptoms over a 1-3 week period. The total duration of illness is about 6-8 weeks.²

The presence of the inspiratory whoop, which is one of the notable hallmarks of this disease in children, is rare in infants less than six months of age.^{1,3,4} A more common presentation of pertussis in neonates is apnea, and typical coughing is not observed.

The incubation period for pertussis is usually 7 - 20 days and the disease is most communicable during the early catarrhal stage of the illness.⁴ A person with pertussis may remain infectious from the catarrhal stage to approximately three weeks or more after the onset of the coughing paroxysms. However, prompt initiation of the appropriate antibiotics may shorten the period of infectiousness to five days or less once treatment has started.⁴

Complications of pertussis include pneumonia, otitis media, seizures, encephalopathy, and death. Increased intrathoracic and intra-abdominal pressure from coughing can produce conjunctival hemorrhages, facial and truncal petechiae, subdural hematoma, spinal epidural hematoma, pneumothorax, subcutaneous emphysema, umbilical hernia, inguinal hernia, and rectal prolapse.²

Diagnosis

The diagnosis of classic pertussis is made clinically, and confirmed by nasopharyngeal culture. A tentative diagnosis may be made employing the Centers for Disease Control and Prevention (CDC) "case definition" as a guide.⁶ The tentative diagnosis is based on the characteristic symptoms of the illness, which include: a prolonged cough illness lasting > two weeks with paroxysms and/or post-tussive vomiting, without other apparent cause. Lymphocytosis commonly appears toward the end of the catarrhal stage or early in the paroxysmal stage, and supports the diagnosis of pertussis in this clinical setting.^{1,4,5} Patients with partial immunity to pertussis may present with an abbreviated catarrhal stage, prolonged coughing without the inspiratory whoop, and no lymphocytosis.

Serological tests are often of little help in the early diagnosis of whooping cough because a rise in antibody titer against *B. pertussis* does not occur until about the third week of the illness.¹ Instead, nasopharyngeal specimens should be obtained for culture within three weeks of cough onset. It has been shown that cultures taken within three weeks of cough onset have a higher proportion of culture-positive results as compared to specimens taken later in the course of the illness.^{1,3,5} Although Direct Fluorescent Antibody (DFA) staining of nasopharyngeal secretions can provide a rapid presumptive diagnosis of pertussis, false positive and false negative results may occur and the test should be used in conjunction with laboratory culture or polymerase chain reaction testing for *B. pertussis*.^{1,3,5}

Treatment

The American Academy of Pediatrics recommends erythromycin, 40 - 50 mg/kg per day (maximum two grams per day) in four divided doses orally for 14 days as the drug of choice for treatment of pertussis and also for the prophylaxis of exposed family contacts of a case. Because the protection afforded by the pertussis vaccine appears to diminish over time,¹ it is generally recommended that

both the patient and close contacts be treated with erythromycin regardless of age and vaccination status. Treatment with erythromycin for the full 14 days is advised to avoid a bacteriologic relapse.¹ Trimethoprim/sulfamethoxazole is an alternative that is useful for older patients who can not tolerate erythromycin, but there is less clinical experience with this preparation. Azithromycin and clarithromycin are two new macrolides that have good *in vitro* activity against *B. pertussis*. Studies suggest that these newer macrolides may also be effective in shorter courses of 5-7 days but their efficacy is unproven.⁴

Prevention

Routine active immunization with acellular pertussis (aP) vaccine is recommended for all children younger than seven years of age, and is combined with diphtheria (D) and tetanus (T) toxoids as DTaP. In infants, the recommended immunization schedule calls for five doses of DTaP given at two, four, and six months of age, with the fourth dose usually administered at 15-18 months of age. The fourth dose of DTaP may be given as early as 12 months of age if the interval between the third and fourth doses is at least six months and the child is unlikely to return for a clinic visit at 15-18 months of age. The fifth dose is given at 4-6 years of age, or upon school entry. If the fourth dose of DTaP is administered on or after the fourth birthday, a fifth dose is not required.

Initiation of active immunization to protect against infection following recent exposure is not effective. Close contacts under seven years of age who have not received four DTaP or DTP doses, or have not received a DTaP or DTP dose within three years, should complete the series according to the recommended schedule. Pertussis vaccine is not recommended for persons seven years of age and older.

Disease Reporting

Physicians should include the possibility

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Pneumococcal Disease

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- African-Americans, Alaska Natives, and specific American Indian populations; and
- children in day care.

Pneumococcal Conjugate Vaccine

Vaccine Administration

PCV7 is administered intramuscularly as a 0.5-ml dose. PCV7 is licensed for use among infants aged 6 weeks. PCV7 can be administered at the same time as other routine childhood vaccinations in a separate syringe at a separate injection site.

Conjugate vaccines, such as PCV7, containing diphtheria toxoid or protein as carriers should **not** be considered immunizing agents against diphtheria.

Precautions and Contraindications

PCV7 is contraindicated among persons known to have a hypersensitivity to any component of the vaccine. Health care providers can choose to delay vaccination of children with moderate or severe illness until the child has recovered, although minor illnesses are not contraindications to vaccination. Concurrent administration of PCV7 and PPV23 is not recommended because safety and efficacy of concurrent vaccination has not been studied.

Recommendations For Use of PCV7

Children for whom PCV7 is recommended:

- All children aged 23 months, and
- children aged 24-59 months with the following conditions:
 - Sickle cell disease and other sickle cell hemoglobinopathies, congenital or acquired asplenia, or splenic dysfunction;
 - Infection with HIV;
 - Immunocompromising conditions; and
 - Chronic illness (cardiac disease, pulmonary disease, excluding asthma unless on high dose corticosteroid therapy, CSF leaks, diabetes mellitus).

Vaccination Schedule

Table 1: Recommended schedule for use of PCV7 among previously unvaccinated infants and children by age at time of first vaccination

Age at first dose	Primary Series	Additional dose
2-6 months	3 doses, 2 months apart*	1 dose at 12-15 months
7-11 months	2 doses, 2 months apart*	1 dose at 12-15 months
12-23 months	2 doses, 2 months apart§	None
24-59 months		
Healthy children	1 dose	None
Children with sickle cell disease, asplenia, HIV infection, chronic illness, or immunocompromising condition¶	2 doses, 2 months apart	None

*For children vaccinated at age <1 year, minimum interval between doses is 4 weeks.

The additional dose should be administered 8 weeks after the primary series has been completed.

§Minimum interval between doses is 8 weeks.

¶Recommendations do not include children who have undergone a bone marrow transplantation.

Table 2: Recommendations for use of PCV7 among children with a lapse in vaccine administration

Age at examination	Previous PCV7 vaccination history	Recommended regimen
7-11 months	1 dose	1 dose of PCV7 at 7-11 months, with a 2nd dose 2 months later, at 12-15 months
	2 doses	Same regimen
12-23 months	1 dose before age 12 months	2 doses of PCV7 2 months apart
	2 doses before age 12 months	1 dose of PCV7 2 months after the most recent dose
24-59 months	Any incomplete schedule	1 dose of PCV7*

*Children with certain chronic diseases or immunosuppressing conditions should receive two doses 2 months apart.

Children for whom PCV7 should be considered:

All children aged 24-59 months, with priority given to:

- children aged 24-35 months;
- children of Alaska Native or American Indian descent;
- children of African-American descent; and
- children who attend group day care centers.*

*Defined as a setting outside the home where a child regularly spends 4 hours per week with 2 unrelated children under adult supervision.

Children Aged 24-59 months Who Are at High Risk for Pneumococcal Infection

Children aged 24-59 months should receive PCV7 vaccination if they are at high risk for pneumococcal infection caused by an underlying medical condition. This includes:

- children with sickle cell disease and other sickle cell hemoglobinopathies;
- children who are functionally or anatomically asplenic;

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Pneumococcal Disease

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- children with HIV infection;
- children who have chronic disease, including chronic cardiac and pulmonary disease (excluding asthma), diabetes mellitus, or CSF leak;
- children with immunocompromising conditions including malignancies, chronic renal failure or nephrotic syndrome, children receiving immunosuppressive chemotherapy, including long-term systemic corticosteroids, and those children who have received a solid organ transplant.

The ACIP recommends two doses of PCV7, administered 2 months apart, followed by one dose of PPV23 administered 2 months after the second dose of PCV7.

Recommendations for Use of PCV7 Among Children Previously Vaccinated with PPV23

Health care providers should vaccinate children aged 24-59 months at high risk

who have already received PPV23 with two doses of PCV7 administered 2 months apart. Vaccination with PCV7 should be initiated 2 months after vaccination with PPV23. Providers should be aware that minimal safety data are available regarding this vaccine sequence.

Recommendations for Use of PPV23 Among Children Previously Vaccinated with PCV7

Children at high risk for pneumococcal disease who have completed the PCV7 vaccination series before age 2 years should receive one dose of PPV23 at age 2 years (2 months after the last dose of PCV7). Although data regarding safety of PPV23 administered after PCV7 are limited, the opportunity to provide additional serotype coverage among these children at very high risk justifies use of the vaccines sequentially. For children of Alaska Native or American Indian descent, addition of PPV23 after PCV7 can be considered.

Revaccination with PPV23

Immunocompromised children or children with sickle cell disease of function or anatomic asplenia should be revacci-

nated with PPV23. If the child is aged 10 years, one revaccination should be considered 3-5 years after the previous dose of PPV23. Health-care providers should not administer a second dose of PPV23 any earlier than 3 years after the initial dose of PPV23. Data are limited regarding adverse events related to a second dose of PPV23 administered after PCV7.

The entire ACIP Recommendations can be viewed, downloaded, and printed at the Centers for Disease Control and Prevention's web site, http://www.cdc.gov/MMWR/mmwr_rr.html.

For further information, please call the Hawai'i Immunization Program at (808) 586-8332 in Honolulu.

REFERENCE.

Centers for Disease Control and Prevention. Preventing Pneumococcal Disease Among Infants and Young Children - Recommendations of the Advisory Committee on Immunization Practices (ACIP). *MMWR*, 2000;49 (No. RR-9):1-38.

Pertussis

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of pertussis as a diagnosis in any patient presenting with acute onset of cough lasting two weeks or longer without other apparent cause. Chapter 156 of the Administrative Rules of the Department of Health (DOH) lists pertussis as an "urgent" report. Diseases labeled "urgent," must be reported by telephone *as soon as a provisional diagnosis is established*. The telephone report is then followed by a written report (via the standard DOH Communicable Disease Report form) submitted by mail or fax within three days to the Epidemiology Branch on O'ahu, or to the District Health Office on the neighbor islands. It bears repeating that "urgent" reports be transmitted to DOH immediately by telephone such that appropriate action may be instituted in a timely manner to prevent further spread of the disease.

For case reporting or more information, please call the Epidemiology Branch on O'ahu at (808) 586-4586, (808) 933-0912 on Hawai'i, (808) 984-8213 on Maui, or (808) 241-3563 on Kaua'i. Reports may be faxed to the Epidemiology Branch in Honolulu at (808) 586-4595, (808) 933-0400 on Hawai'i, (808) 984-8222 on Maui, and (808) 241-3480 on Kaua'i.

REFERENCES:

¹ Wyngarden J. B., Smith L.H., Bennett J.E., (eds.). *Cecil Textbook of Medicine*, 19th ed., 1992. Pp. 1674-1676.

² Mandell G. L., Bennett J.E., Dolin R., (eds.). *Principles and Practice of Infectious Diseases*, 5th ed., 2000. Churchill Livingstone, Philadelphia. Pp. 2414-2422.

³ Donowitz L. G., (ed.). *Infection Control in the Child Care Center and*

Preschool. 3rd ed., 1996. Pp. 215-221.

⁴ Pickering L. K., (ed.). 2000 Red Book: Report of the Committee on Infectious Diseases. Elk Grove, IL. Am. Acad. of Pediatrics. 25th ed., 2000. Pp. 435-448.

⁵ Tierney L. M., Jr., McPhee S.J., and Padakis M.A., (eds.). *Current Medical Diagnosis & Treatment*. Appleton & Lange, Stamford, CT. 1996. Pp. 1203-1204.

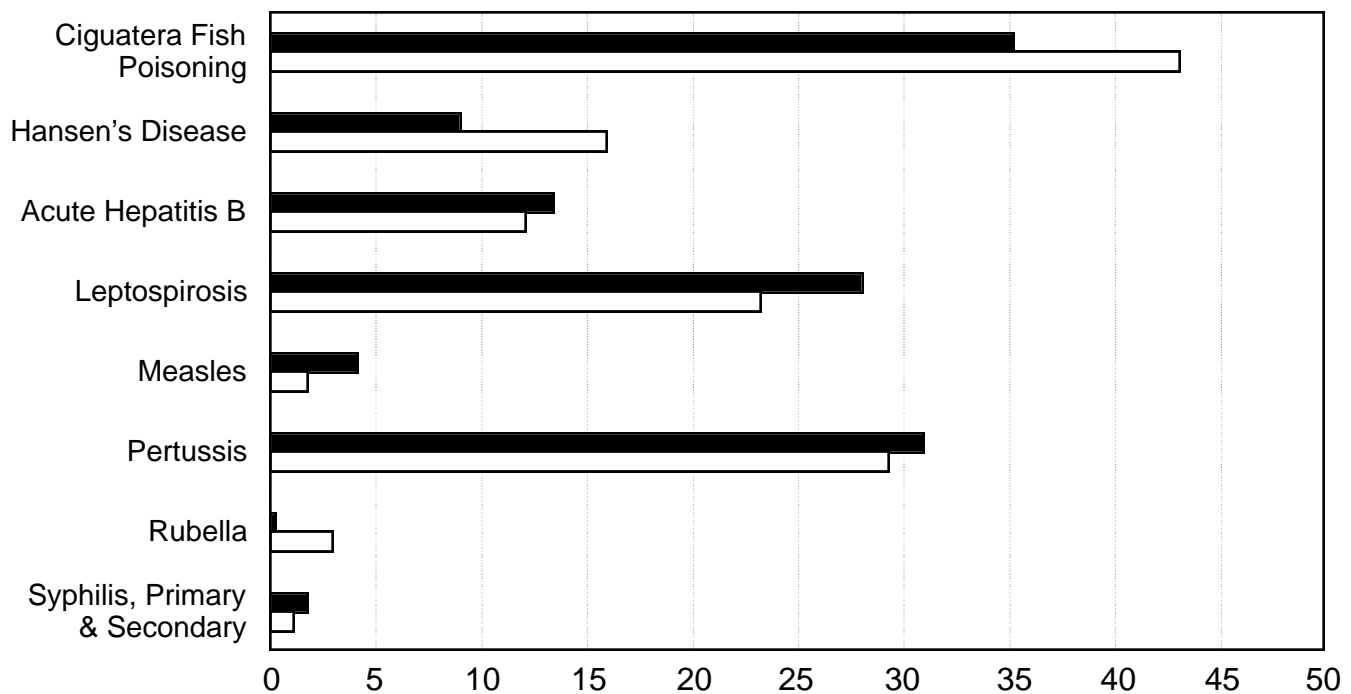
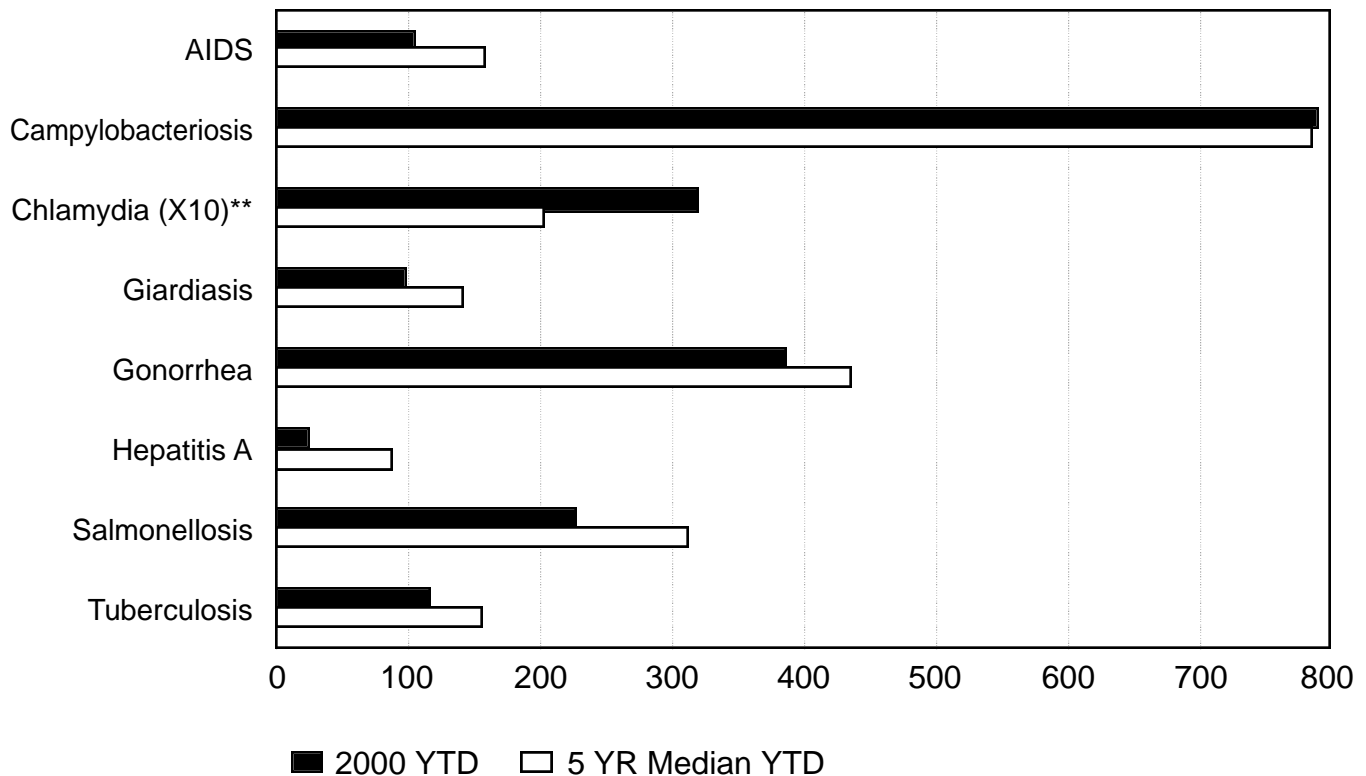
⁶ Centers for Disease Control and Prevention. Case definitions for infectious conditions under public health surveillance. *MMWR*; 46(No.RR-10). 1997. p 25.

Submitted by Lawrence Inouye, Ph.D., Epidemiological Specialist, Investigation Section, Epidemiology Branch.

Communicable Disease Surveillance

Selected Diseases by Date of Report*

Hawai'i, 2000 Year-to-date Through November



* These data do not agree with tables using date of onset or date of diagnosis.

**The number of cases graphed represent 10% of the total number reported.

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Communicable Disease Report

Philip P. Bruno, D.O., F.A.C.P., Chief, Communicable Disease Division
Paul V. Effler, M.D., M.P.H., State Epidemiologist

November/December 2000

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- ◆ *Preventing Pneumococcal Disease Among Infants and Young Children*
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- ◆ *Pertussis in Hawai'i: 1990-1999*